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SOIL SURVEY INTERPRETATIONS FOR WOODLANDS

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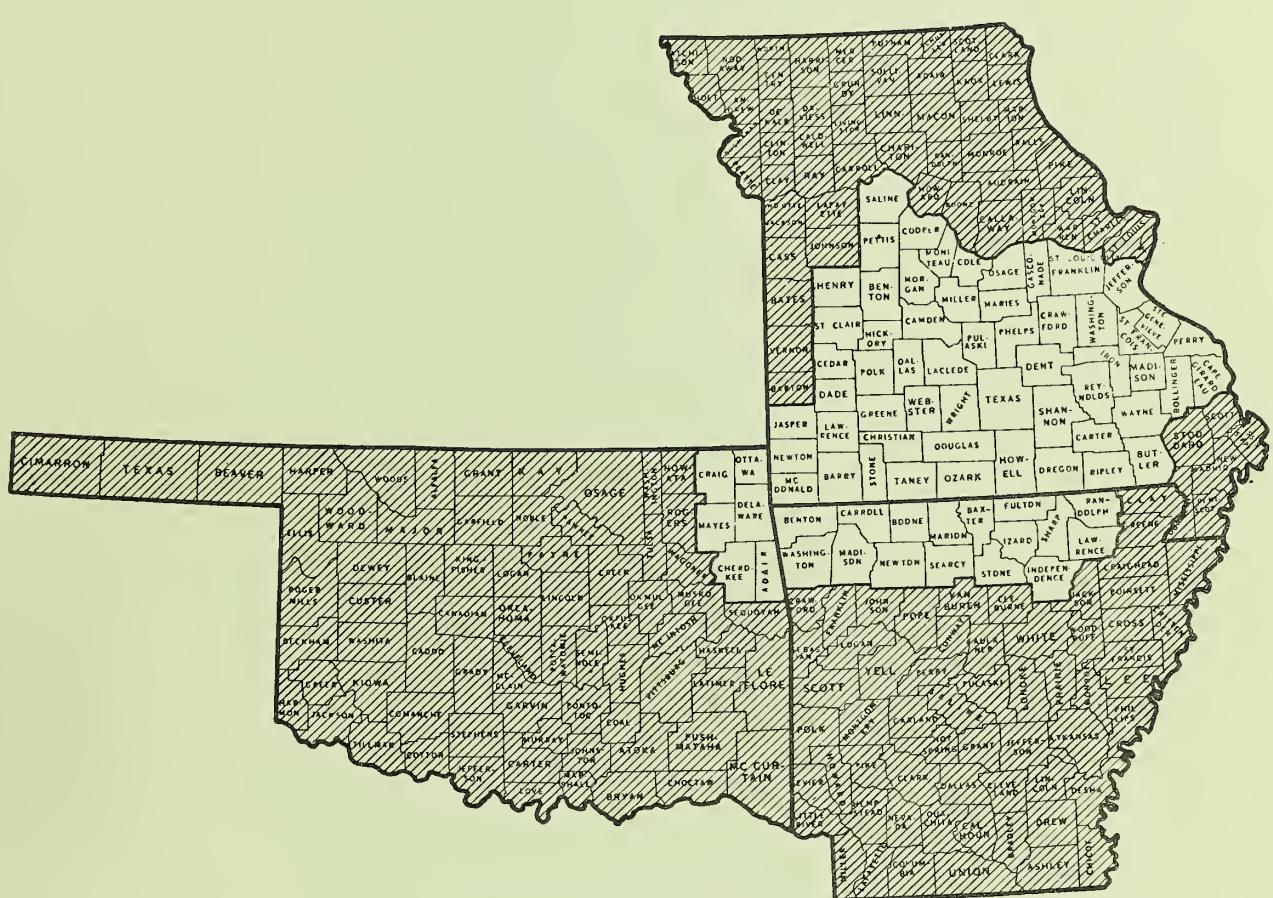
U. S. DEPT. OF AGTRICULTURE
NATIONAL AGTRICULTURAL MUSEUM

OZARK HIGHLAND AREA

MAR - 11973

ARKANSAS, MISSOURI, AND OKLAHOMA

CATALOGING - PREP.



PROGRESS REPORT W-6 ~ NOVEMBER 1968

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Fort Worth, Texas

This report contains interpretations of soil surveys for woodland use and management in the Ozark Highlands area of Arkansas, Missouri and Oklahoma. The purpose is to provide currently available knowledge about soils as they relate to the establishment, growth, management, and harvesting of wood crops for the use of foresters, agricultural workers, woodland owners and woodland managers. The information will be used by the Soil Conservation Service and cooperating agencies in the development of technical guides, soil handbooks and soil survey reports.

Field information was gathered by teams of foresters and soil scientists. Representatives of Federal and State agencies, the wood-using industry, and others cooperated in gathering field data. The interpretations presented herein are made for use with soil surveys.

Table 2, SOIL RATINGS FOR WOODLAND USE, contains evaluations of productivity, management problems, and species suitability for the major soils in the Ozark Highlands. In column one (1) the soils are listed alphabetically by series. Separate ratings are made of phases of soil series where differences among phases are significant for woodland use or management.

Column two (2) contains a list of some of the commercially important tree species which are adapted to the soil in column one. These are the tree species which woodland managers generally favor in intermediate or improvement cuttings, after considering the form and vigor of individual trees. Priority among species will be influenced by local marketability and the owners objectives, as well as the quality of wood products from a given species.

Column three (3) gives the average site index for the most important species listed in column two. The standard deviation is shown as a plus or minus figure (\pm) for each species where five or more plots were taken

on the soils listed in column one. The site index curves used for each tree species are shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. An asterisk (*) following the site index rating indicates the rating is an estimate based on the same species on a similar soil, or by comparison with another species on the same soil. Site index is the average height of dominant trees at age 30 for cottonwood, age 35 for sycamore, and age 50 for all other species.

Column four (4) gives the range of site index of the most important tree species. The range in site index values is dependent on soil physical conditions, aeration, and nutrient and moisture availability during the growing season.

Column five (5) shows the potential erosion hazard of the soil in woodland use following cutting operations, or where the soil is exposed along roads, trails, firebreaks, or log-yarding areas. A rating of slight indicates that problems of erosion control are unimportant. A rating of moderate indicates some attention must be given to prevent unnecessary soil erosion. A rating of severe indicates that intensive treatments, or special equipment and methods of operation should be planned to minimize soil erosion. The potential erosion hazard is based on slope, soil depth, and erodibility, and soil loss tolerance.

Column six (6) includes evaluation of equipment restrictions. Ratings reflect limitations in the use of equipment for managing or harvesting the crop. A rating of slight indicates equipment use is seldom limited in kind or time of year. A rating of moderate indicates a need for modified equipment or seasonal restrictions due to slope, stones, obstructions, soil wetness, flooding, or overflows. A rating of severe indicates the need for specialized equipment due to one or more of the factors listed above.

Column seven (7) indicates the degree of expected seedling mortality during the first two growing seasons after planting or seeding. Normal rainfall, adequate site preparation, good planting stock, proper planting methods, and appropriate protection and cultivation are assumed. A rating of slight indicates that unsatisfactory survival on less than 25 percent of the area is likely. A rating of moderate indicates that unsatisfactory survival is likely on 25 to 50 percent of the area planted. A rating of severe indicates that unsatisfactory survival is likely on more than 50 percent of the area.

It will be noted that aspect on slopes greater than 20 percent is ordinated as being "hot" or "cool" slopes. Hot slopes include those which have south and west aspects; from 135 degrees azimuth (clockwise) to 315 degrees; and cool slopes are those which have north and east aspects, from 315 degrees (clockwise) to 135 degrees. Column seven implies that seedling mortality is greater on hot slopes than on cool slopes.

Column eight (8) lists several suitable tree species for planting on the soil named in column one. The list may include some species which do not normally occur in native stands on the designated soil or in this physiographic area, as well as some of the important species listed in column two.

Column nine (9) shows the ordination of the soils into a woodland suitability group. A woodland suitability group is made up of kinds of soil that are capable of producing similar kinds of wood crops, that need similar management to produce these crops, and that have about the same potential productivity. The ordination system and the suitability group symbols are explained in the following paragraphs.

The first element of the group symbol indicates the woodland suitability class. It expresses site quality by an arabic numeral ranging from 1 to 5, with class 1 the highest in potential productivity, followed by class 2, 3, 4, and 5. It is based on the average site index of one or more indicator forest types or tree species, as shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. The indicator species are underscored in column two of Table 2.

The second element in the symbol indicates the suitability subclass. It expresses selected soil properties that cause moderate to severe hazards or limitations in woodland use or management, by one of the following lower case arabic letters:

Subclass x (stoniness or rockiness). Soils having restrictions or limitations for woodland use or management due to stones or rocks.

Subclass w (excessive wetness). Soils in which excessive water, either seasonally or year long, causes significant limitations for woodland use or management. These soils have restricted drainage, high water tables, or overflow hazards which adversely affect either stand development or management.

Subclass d (restricted rooting depth). Soils with restrictions or limitations for woodland use or management due to restricted rooting depths. Soils shallow to hard rock, hardpan, or other layers in the soil that restrict roots are examples.

Subclass c (clayey soils). Soils having restrictions or limitations for woodland use or management due to the kind or amount of clay in the upper portion of the soil profile.

Subclass s (sandy soils). Sandy soils with little or no textural B horizons and having moderate to severe restrictions or limitations for woodland use or management. These soils impose equipment limitations, have low moisture-holding capacity, and normally are low in available plant nutrients.

Subclass f (fragmental or skeletal soils). Soils with restrictions or limitations for woodland use or management due to large amounts of coarse fragments in the profile over 2 mm and less than 10 inches, but includes flaggy soils.

Subclass r (relief or slope steepness). Soils with restrictions or limitations for woodland use or management due only to steepness of slope.

Subclass o (slight or no limitations). Soils with no significant restrictions or limitations for woodland use or management.

Some kinds of soil may have more than one set of subclass characteristics.

Priority in placing each kind of soil into a subclass is in the order that the subclass characteristics are listed above.

The third element in the symbol indicates the degree of hazards or limitations, and the general suitability of the soils for certain kinds of trees. The three management problems considered here are: (1) erosion hazard, (2) equipment restrictions, and (3) seedling mortality.

The numeral 1 indicates soils with no to slight management problems, and they are best suited for needleleaf trees.

The numeral 2 indicates soils with one or more moderate management problems, and they are best suited for needleleaf trees.

The numeral 3 indicates soils with one or more severe management problems, and they are best suited for needleleaf trees.

The numeral 4 indicates soils with no to slight management problems, and they are best suited for broadleaf trees.

The numeral 5 indicates soils with one or more moderate management problems, and they are best suited for broadleaf trees.

The numeral 6 indicates soils with one or more severe management problems, and they are best suited for broadleaf trees.

The numeral 7 indicates soils with no to slight management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 8 indicates soils with one or more moderate management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 9 indicates soils with one or more severe management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 0 indicates the soils are not suitable for the production of major commercial wood products.

TABLE 1 - GUIDE FOR WOODLAND SUITABILITY CLASSES
OZARK HIGHLANDS

	:	1	:	2	:	3	:	4	:	5
Indicator Forest Type or Species	:	Very High	:	Moderately High	:	Moderate	:	Low		
	:	High	:		:	High	:			
	:		: <td></td> <th>:<td></td><th>:<td></td><th>:</th></th></th>		: <td></td> <th>:<td></td><th>:</th></th>		: <td></td> <th>:</th>		:	
Site Index										
Cottonwood	(1):	106+	:	96-105	:	86-95	:	76-85	:	75-
Yellow-poplar	(2):	106+	:	96-105	:	86-95	:	76-85	:	75-
Sweetgum	(3):	96+	:	86-95	:	76-85	:	66-75	:	65-
Water oaks	(4):	96+	:	86-95	:	76-85	:	66-75	:	65-
Nuttall oak	(5):	96+	:	86-95	:	76-85	:	66-75	:	65-
Loblolly pine	(6):	96+	:	86-95	:	76-85	:	66-75	:	65-
Shortleaf pine	(6):	86+	:	76-85	:	66-75	:	56-65	:	55-
Sou. red oak	(7):	86+	:	76-85	:	66-75	:	56-65	:	55-
Redcedar	(8):	66+	:	56-65	:	46-55	:	36-45	:	35-
	:		:		:		:		:	

- (1) Broadfoot, W. M., 1960, Field Guide for Evaluating Cottonwood Sites, USDS Occ. Paper 178 (Fig. 4)
- (2) Doolittle, W. T., 1957, Site Index Curves for Yellow-poplar So. Appalachians.
- (3) Broadfoot, W. M., 1959, Guide for Evaluating Sweetgum Sites, USFS Occ. Paper 176 (Fig. 4)
- (4) Broadfoot, W. M., 1963, Guide for Evaluating Water Oak Sites in the Mid-South, USFS Res. Paper SO-1 (Fig. 4).
- (5) Broadfoot, W. M., Unpublished manuscript. Sou. For. Expt. Sta., 1966.
- (6) Coile, T. S. and F. X. Schumacher, Jour. For. 53:432-435 (Fig. 4 and 8)
- (7) Schnur, L. G., 1937, Yield, Stand and Volume Tables for Even-Aged Upland Oak Forest, USDA Tech. Bull. 560, Fig. 2.
- (8) TVA 1948, Site Curves, E. Redcedar, Tennessee Valley.

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 1 of 10

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species 1/	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Agnos</u> gravelly fine sandy loam, gravelly silt loam, loam, gravelly loamy fine sand, loamy fine sand 0-20% slopes Loamy fine sand 20%+ slopes	Red oaks Red cedar Loblolly pine <u>Shortleaf pine</u>	60 * 40 * 65 60 *	56-65 36-45 60-70 56-65	Slight Slight Slight	Slight Slight Slight	Shortleaf pine Red cedar Loblolly pine	401	
<u>Stony loamy</u> fine sand 1-20% slopes				Moderate to Severe	Moderate to Severe	Slight - cool Moderate - hot		- 4r3 - - -
<u>Stony loamy</u> fine sand 20%+ slopes				Slight	Moderate	Slight - cool Moderate - hot		- 4r2 - - -
				Moderate to Severe	Moderate to Severe	Moderate - cool Severe - hot		
<u>Albertville</u> gravelly loamy fine sand 1-20% slopes	<u>Shortleaf pine</u> Red cedar Loblolly pine	60 * 40 * -	56-65 36-45	Slight	Slight	Slight	Shortleaf pine Red cedar Loblolly pine	401
<u>Ashe</u> cherty silt loam 0-20% slopes	Upland oaks <u>Shortleaf pine</u> Red cedar	60 55 35	56-65 50-60 30-40	Slight	Slight	Slight	Shortleaf pine Red cedar Loblolly pine	501
<u>Ashton</u> cherty silt loam, silt loam, 0-3% slopes, undulating	<u>Shortleaf pine</u> Red oaks Black walnut White oaks Sycamore Cottonwood Water oaks Shumard oak Black locust Black cherry	80 * 80 * - 70 80 80 - - - -	76-85 76-85 - 66-75 76-85 76-85	Slight	Slight	Slight	Black walnut Shumard oak Cottonwood 3/ Sycamore Red oaks White ash Black locust White oaks <u>Shortleaf pine</u> Loblolly pine	207
<u>Bates</u> fine sandy loam, 0-12% slopes	<u>Shortleaf pine</u> Red cedar	55 35	50-60 30-40	Slight	Slight	Slight	Shortleaf pine Red cedar	501
<u>Baxter</u> cherty silt loam, coarse cherty silt loam 0-20% slopes 20%+ slopes	<u>Shortleaf pine</u> Red oaks White oak Black walnut Black locust Black cherry Red cedar	564 61+7 58 * - - - 35 *	50-60 56-65 56-65 - - - 30-40	Slight Slight Slight	Moderate to Severe	Slight - cool Moderate - hot	<u>Shortleaf pine</u> Red oaks 3/ Black walnut 3/ Black locust 3/ Red cedar	407
<u>silt loam</u> 0-20% slopes 20%+ slopes	<u>Shortleaf pine</u> Red oaks Red cedar Black walnut Black locust Black cherry White oak	66+2 70 * 45 * - - - 65 *	60-70 66-75 40-50 - - - 60-70	Slight Slight Slight Severe	Moderate to Severe	Slight - cool Moderate - hot		- 3r7 - - -
								- 3r9 - - -
<u>Bruno</u> loamy sand 0-1% slopes	Sweetgum Cottonwood Sycamore Loblolly pine <u>Shortleaf pine</u>	80 90 80 - -	76-85 86-95 76-85	Slight	Moderate	Severe	Cottonwood 4/ Sycamore 4/ Loblolly pine Shortleaf pine Sweetgum	389

TABLE 2. SOIL RATINGS FOR WOODLAND USE

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Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Captina silt loam, silt loam, thick surface, cherty silt loam, 0-12% slopes --- stony loam, 1-14% slopes	Shortleaf pine Red oaks Red cedar Black walnut Black locust Black cherry Loblolly pine	58+6 64 * 40 *	56-65 60-70 36-45	Slight Moderate	Slight Moderate	Slight Slight- cool Moderate- hot Slight	Shortleaf pine Loblolly pine Red cedar Black walnut 3/ Black locust 3/ Red oaks 3/	4c7 -4x8--
Cherokee silt loam, 0-1% slopes	Water oak Sweetgum Green ash Hackberry Catalpa Osage orange	55 55 - - - -	50-60 50-60	Slight Moderate	Slight Moderate	Slight Slight- cool Moderate- hot Slight	Green ash Catalpa 4/ Osage orange 4/	5c5
Christian fine sandy loam, gravelly fine sandy loam, gravelly loamy fine sand, 1-20% slopes --- 20%+ slopes	Shortleaf pine Red oak Red cedar Black walnut Black locust White oak Black cherry Loblolly pine	57+5 67 * 40 *	56-65 60-70 36-45	Slight Moderate to Severe	Slight Moderate to Severe	Slight Slight- cool Moderate- hot Slight	Shortleaf pine Loblolly pine Red cedar Black walnut 3/ Black locust 3/ Red oaks 3/	4c7 -4x9--
stony sandy loam, stony loamy fine sand, 1-20% slopes --- 20%+ slopes								-4x8--
Fine sandy loam 3-12% slopes, severely eroded	Shortleaf pine Red cedar Loblolly pine	50-* 30 *	46-55 26-35	Slight Moderate to Severe	Slight Moderate to Severe	Slight Slight- cool Moderate- hot Slight	Loblolly pine Shortleaf pine Red cedar	-501--
Clarksville cherty silt loam 0-20% slopes --- 20%+ slopes	Shortleaf pine Red oak Red cedar Loblolly pine Black walnut Black locust White oak	55+6 64+8 35 *	50-60 60-70 30-40	Slight Moderate to Severe	Slight Moderate to Severe	Moderate Moderate cool Severe- hot	Shortleaf pine Loblolly pine Red oaks 3/ Black walnut 3/ Black locust 3/ Red cedar	4f8
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes --- 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35	50-60 56-65 30-40	Slight Moderate to Severe	Slight Moderate to Severe	Moderate Moderate cool Severe- hot	Shortleaf pine Loblolly pine Red cedar	5c2
stony fine --- sandy loam, stony silt loam 1-20% slopes --- 20%+ slopes								-5x2--

TABLE 2. SOIL RATINGS FOR WOODLAND USE

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Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Conasauga gravelly fine sandy loam, silt loam, silty clay loam 1-20% slopes 20%+ slopes	Shortleaf pine Red cedar Loblolly pine	55 * 35 *	50-60 30-40	Slight Moderate to Severe Slight Moderate to Severe	Slight Moderate to Severe Moderate Moderate to Severe	Moderate Severe- hot Moderate Severe- hot	Shortleaf pine Red cedar Loblolly pine	5c2
Stony sandy loam 1-20% slopes 20%+ slopes								5c2
Corydon cherty silt loam, fine cherty silt loam, silt loam, stony fine sandy loam, stony silt loam, stony silty clay loam 1-12% slopes 12-20% slopes 20%+ slopes	Shortleaf pine Red cedar Loblolly pine	50 * 30 * -	46-55 26-35	Slight Moderate to Severe	Slight Slight Moderate to Severe	Moderate Severe- hot	Shortleaf pine Red cedar Loblolly pine	5d2
Coulstone cherty silt loam 0-20% slopes 20%+ slopes	Shortleaf pine Red oak Red cedar Loblolly pine Black locust Black walnut White oak	55 * 64 * 35 * - - - -	50-60 60-70 30-40	Slight Moderate to Severe	Slight Moderate to Severe	Moderate Severe- hot	Shortleaf pine Loblolly pine Red oaks 3/ Black walnut 3/ Black locust 3/ Red cedar	4f8
Craig cherty silt loam, silt loam 0-8% slopes	Shortleaf pine Red cedar Loblolly pine	50 * 30 * -	46-55 26-35	Slight Moderate	Slight Severe	Moderate Severe	Shortleaf pine Loblolly pine Red cedar	5f2
Culleoka flaggy silt loam 1-12% slopes 12-20% slopes	Shortleaf pine Red cedar Loblolly pine	50 * 30 *	46-55 26-35	Slight Moderate	Slight Severe	Severe	Shortleaf pine Loblolly pine Red cedar	5f3
Cumberland fine sandy loam, gravelly silt loam, loam, silt loam 0-12% slopes	Shortleaf pine Red oak Red cedar Black walnut Sweetgum Loblolly pine White oak	70 * 70 * 50 * - - - -	66-75 66-75 46-55	Slight Moderate	Slight Severe	Slight	Black walnut Black locust Shortleaf pine Loblolly pine Red oaks White ash Red cedar	307
Decatur cherty silt loam, silt loam, cherty silt loam, thick surface, coarse cherty silt loam 1-20% slopes 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Black cherry White oak	66 * 67 1/4 45 * - - - - -	60-70 66-75 40-59	Slight Moderate to Severe	Slight Moderate to Severe	Slight Severe	Black walnut 3/ Black locust 3/ Red oaks 3/ Shortleaf pine Loblolly pine Red cedar	307
								3r9

TABLE 2. SOIL RATINGS FOR WOODLAND USE

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Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dewey cherty silt loam, silt loam, cherty silt loam, thick surface, coarse cherty silt loam, 1-20% slopes 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Black cherry White oak	66 * 67+4 45 *	60-70 66-75 40-50	Slight	Slight	Slight	Black walnut 3/ Black locust 3/ Red oaks 3/ Shortleaf pine Loblolly pine Red cedar	307
Dunning silt loam, silty clay loam, 0-3% slopes, undulating silty clay 0-3% slopes	Water oaks Sweetgum Shumard oak Cottonwood Sycamore Cow oak Overcup oak Green ash	75 75 75 80	70-80 70-80 70-80 76-85	Slight	Moderate to Severe	Moderate to Severe	Shumard oak Water oaks Cottonwood 4/ Sweetgum Sycamore 4/ Green ash	4w5
El Dorado cherty silt loam 1-12% slopes 12-20% slopes	Shortleaf pine Red cedar Loblolly pine	50 30 -	46-59 26-35	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5f2
Elk gravelly silt loam, silt loam 0-12% slopes	Shortleaf pine Red oak Red cedar Black walnut Sweetgum Loblolly pine Black cherry Black locust White ash	70 70 50	66-75 66-75 40-55	Slight	Slight	Slight	Shortleaf pine Loblolly pine Black walnut Black locust Red oaks Sweetgum Red cedar White ash	307
Elsa soils cobbly and gravelly, stony silt loam 0-3% slopes	Shortleaf pine Red oak White oak Red cedar Loblolly pine Black walnut White ash Black cherry Black locust Sweetgum Sycamore Cottonwood Water oaks River birch	70 * 71+2 66 * 50 *	66-75 66-75 60-70 46-55	Slight	Severe	Severe	Shortleaf pine Loblolly pine Red oaks Black walnut Black locust White ash White oak Sweetgum Cottonwood 4/ Sycamore 4/	3f9
Emory cherty silt loam, silt loam, 0-12% slopes	Shortleaf pine Red oak Red cedar Black walnut Black locust Black cherry Loblolly pine	70 * 70 * 50	66-75 66-75 46-55	Slight	Slight	Slight	Black walnut Black locust Red oaks Shortleaf pine Loblolly pine Red cedar	307

TABLE 2. SOIL RATINGS FOR WOODLAND USE

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TABLE 2. SOIL RATINGS FOR WOODLAND USE

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Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Huntington fine sandy loam, gravelly fine sandy loam, gravelly silt loam, silt loam, 0-8% slopes, undulating	Shortleaf pine	80	76-85	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red oaks Black walnut Black locust Sycamore 4/ Cottonwood 4/ Shumard oak White oak Sweetgum White ash	207
	Red oaks	80 *	76-85					
	Cottonwood	90	86-95					
	Sycamore	85	80-90					
	Sweetgum	80	76-85					
	White oak	75	70-80					
	Loblolly pine	-						
	Black locust	-						
	Black walnut	-						
	Black cherry	-						
	White ash	-						
	Water oaks	-						
	Shumard oak	-						
Jay silt loam, silt loam shallow, silty clay loam 1-12% slopes	Shortleaf pine	60 *		Slight	Slight	Slight	Shortleaf pine Loblolly pine Red cedar Red oaks 3/ Black walnut 3/ Black locust 3/	407
	Red oaks	65 *						
	Red cedar	40 *						
	Loblolly pine	-						
	Black walnut	-						
	Black locust	-						
	Black cherry	-						
	White oak	-						
Landisburg cherty silt loam, silt loam 1-12% slopes	Shortleaf pine	60 *	56-65	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red cedar Red oaks 3/ Black walnut 3/ Black locust 3/	407
	Red oaks	65 *	60-70					
	Red cedar	40 *	36-45					
	Loblolly pine	-						
	Black walnut	-						
	Black locust	-						
	Black cherry	-						
Lawrence silt loam 0-3% slopes	Shortleaf pine	60 *	56-65	Slight	Moderate	Slight	Shortleaf pine Loblolly pine Red cedar	4w2
	Red oak	60 *	56-65					
	Red cedar	40 *	36-45					
	Sweetgum	-						
	Loblolly pine	-						
Lebanon silt loam 0-14% slopes	Shortleaf pine	57 *	56-60	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	407
	Red oaks	65 *	60-70					
	Red cedar	40 *	36-45					
	Loblolly pine	-						
Lindside clay loam, gravelly silt loam, loam, silt loam, 0-8% slopes, undulating	Shortleaf pine	80 *	76-85	Slight	Slight	Slight	Shortleaf pine Black walnut Loblolly pine Cottonwood 4/ Sycamore 4/ Shumard oak Sweetgum Black locust White ash White oak	207
	Red oaks	80 *	76-85					
	Sweetgum	80	76-85					
	Shumard oak	80	76-85					
	Cottonwood	80	76-85					
	Sycamore	75	70-80					
	Black walnut	-						
	Water oaks	-						
	Green ash	-						
	Black locust	-						
Locust fine sandy loam, gravelly fine sandy loam, gravelly loam, loam, loamy fine sand, 0-20% slopes 20%+ slopes	Shortleaf pine	64	60-70	Slight	Slight	Slight	Black walnut 3/ Loblolly pine Shortleaf pine Red cedar Red oaks 3/ Black locust 3/	407
	Red oaks	60	56-65					
	Red cedar	45	40-50					
	Loblolly pine	-						
	Black walnut	-						
	Black locust	-						
	Sweetgum	-						
Stony fine sandy loam 1-20% slopes				Moderate to Severe	Moderate to Severe	Slight cool Moderate hot	Black walnut 3/ Loblolly pine Shortleaf pine Red cedar Red oaks 3/ Black locust 3/	4x9 --
				Slight	Moderate	Slight	Black walnut 3/ Loblolly pine Shortleaf pine Red cedar Red oaks 3/ Black locust 3/	4x8 --

TABLE 2. SOIL RATINGS FOR WOODLAND USE

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Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Melvin silt loam 0-3% slopes, undulating	Cottonwood Sycamore Shumard oak Sweetgum Water oak	80 80 75 80 80	76-85 76-85 70-80 76-85 76-85	Slight	Severe	Severe	Shumard oak Cottonwood 4/ Sycamore 4/ Sweetgum Water oaks Green ash	3w6
Minvale cherty silt loam, silt loam, 1-20% slopes -- 20% slopes --	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Black cherry White oak	61 * 70 * 40 *	56-65 65-75 36-45	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red oaks Black walnut Black locust Red cedar	3o7
Mountview silt loam 0-12% slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 * 60 * 35 *	50-60 56-65 30-40	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red cedar	5o1
Newark silt loam 0-3% slopes, undulating	Sweetgum Cottonwood Sycamore Shumard oak Water oaks Green ash Red oaks Overcup oak	80 90 85 80 80	76-85 86-95 80-90 76-85 76-85	Slight	Moderate	Moderate	Shumard oak Cottonwood 4/ Sycamore 4/ Sweetgum Green ash Water oaks	3w5
Newtonia silt loam 0-12% slopes	Shortleaf pine Red oak Black walnut Loblolly pine Sweetgum Red cedar Black locust Black cherry	70 * 70 * - - 70 50	66-75 66-75 66-75 46-55	Slight	Slight	Slight	Black walnut Black locust Loblolly pine Shortleaf pine Red oaks Sweetgum Red cedar	3o7
Nixa cherty silt loam, silt loam, 1-20% slopes	Shortleaf pine Red oaks White oak Red cedar Black walnut Loblolly pine Black locust Black cherry	58+5 62+6 60 * 40 *	56-65 56-65 56-65 36-45	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar Black walnut 3/ Black locust 3/ Red oaks 3/	4f8
Pembroke gravelly fine sandy loam, gravelly silt loam, silt loam 1-12% slopes	Shortleaf pine Red oaks Red cedar Black walnut White oak White ash Black cherry Black locust Loblolly pine	70 * 70 * 50 - - - - - -	66-75 66-75 46-55	Slight	Slight	Slight	Shortleaf pine Loblolly pine Black walnut Black locust Red oaks White ash Red cedar	3o7
Pickwick silt loam 1-8% slopes	Shortleaf pine Loblolly pine Red oaks Red cedar Black walnut Black locust Sweetgum White oak	70 80 70 50 - - - -	66-75 76-85 66-75 46-55	Slight	Slight	Slight	Black walnut 3/ Black locust 3/ Loblolly pine Shortleaf pine Red oak Red cedar	3o7

TABLE 2. SOIL RATINGS FOR WOODLAND USE

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Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pineville loamy fine sand 0-20% slopes 20%+ slopes	Shortleaf pine Red cedar Loblolly pine	59+6 40* -	56-65	Slight Moderate to Severe	Slight Moderate to Severe	Severe	Shortleaf pine Loblolly pine Red cedar	4s3
Razort fine sandy loam, gravelly fine sandy loam, gravelly silt loam, silt loam, 0-8% slopes, undulating	Shortleaf pine Red oaks Cottonwood Sycamore Sweetgum White oak Loblolly pine Black locust Black walnut Black cherry White ash Water oaks Shumard oak	80 80 * 90 85 80 75 - - - - - - - -	76-85 76-85 86-95 80-90 76-85 70-80	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red oaks Black walnut Black locust Sycamore 4/ Cottonwood 4/ Shumard oak White oak Sweetgum White ash	2o7
Robertsville silt loam 0-3% slopes	Cottonwood Sycamore Shumard oak Sweetgum Water oaks Green ash Overcup oak	80 80 75 75 75 - -	76-85 76-85 70-80 70-80 70-80 -	Slight	Severe	Severe	Shumard oak Cottonwood 4/ Sycamore 4/ Sweetgum Water oaks Green ash	4w6
Russellville silt loam 0-12% slopes	Shortleaf pine Red cedar Red oaks Sweetgum Loblolly pine Black walnut Black cherry Black locust	60 40 65 65 - - - -	56-65 36-45 60-70 60-70	Slight	Slight	Slight	Loblolly pine Shortleaf pine Red cedar Black walnut 3/ Red oaks 3/ Sweetgum 3/ Black locust 3/ White ash 3/	4o7
Sallisaw gravelly silt loam, silt loam, 0-8% slopes	Shortleaf pine	53	46-55	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red cedar	5o1
Samba silt loam, silt loam (mounded), silty clay, silty clay (mounded), 0-3% slopes	Water oaks Sweetgum Loblolly pine Shortleaf pine	70 70 70 65	66-75 66-75 66-75 60-70	Slight	Moderate	Moderate	Sweetgum Loblolly pine Shortleaf pine	4w8
Sango silt loam 0-3% slopes	Shortleaf pine Red oak Red cedar Sweetgum Loblolly pine	60 * 60 * 40 * - -	56-65 56-65 36-45	Slight	Moderate	Slight	Shortleaf pine Loblolly pine Red cedar	4w2
Sloan silt loam, silt loam (mounded), silty clay, silty clay (mounded), 0-3% slopes	Water oaks Sweetgum Loblolly pine Shortleaf pine	70 70 70 65	66-75 66-75 66-75 60-70	Slight	Moderate	Moderate	Sweetgum Loblolly pine Shortleaf pine	4w8

TABLE 2. SOIL RATINGS FOR WOODLAND USE

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Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sogn rocky silty clay, gravelly silty clay loam, stony silty clay loam, 1-12% slopes 12-20% slopes 20%+ slopes	Shortleaf pine Red cedar Hackberry Black locust Native vegetation White ash	50 and 30 and	less * less *	Slight	Moderate	Moderate to Severe	Red cedar Shortleaf pine Black locust 3/ Native vegetation White ash	5d9
Staser silt loam, gravelly loam 0-3% slopes	Shortleaf pine Red oaks Cottonwood Sycamore Sweetgum White oak Loblolly pine Black locust Black walnut Black cherry White ash Water oaks Shumard oak	80 80 * 90 85 80 75	76-85 76-85 86-95 80-90 76-85 70-80	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red oaks Black walnut Black locust Sycamore 4/ Cottonwood 4/ Shumard oak White oak Sweetgum. White ash	2e7
Summit silty clay loam 0-3% slopes stony silty clay loam 0-20% slopes 20%+ slopes	Red cedar Water oaks Hackberry Green ash	35	30-40	Slight	Moderate	Moderate	Red cedar Green ash Catalpa 4/ Osage orange	5e8
Talbott cherty silt loam, coarse cherty silt loam, gravelly sandy loam 1-20% slopes 20%+ slopes	Shortleaf pine Red oaks Black locust Black walnut Black cherry Loblolly pine Red cedar	55+4 63+7 - - - - 35 *	50-60 60-70	Slight	Slight	Slight	Shortleaf pine Red cedar Loblolly pine Black walnut 3/ Black locust 3/ Red oaks 3/	4e7
Verdigris silt loam 0-1% slopes	Red oaks Cottonwood	75 85	70-80 80-90	Slight	Moderate	Moderate	Cottonwood Green ash Water oaks Sweetgum Pecan Catalpa (post lots)	3e5
soils frequently flooded	Red oaks Cottonwood	75 80	70-80 75-85	Severe	Severe	Severe	Cottonwood Pecan	3e6

TABLE 2. SOIL RATINGS FOR WOODLAND USE

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Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Viraton</u> cherty silt loam, coarse cherty silt loam 0-20% slopes 20%+ slopes	<u>Shortleaf pine</u> <u>Red oaks</u> <u>White oak</u> Black walnut Black locust Black cherry Red cedar	56 * 61 * 58 * - - - 35 *	50-60 56-65 56-65 - - - 30-40	Slight Slight Slight	Moderate to Severe	Moderate to Severe	Shortleaf pine Red oaks 3/ Black walnut 3/ Black locust 3/ Red cedar Loblolly pine	407
<u>silt loam</u> 0-20% slopes 20%+ slopes	<u>Shortleaf pine</u> <u>Red oaks</u> <u>Red cedar</u> Black walnut Black locust Black cherry White oak	66-72 70 * 45 * - - - 65 *	60-70 66-75 40-50 - - - 60-70	Slight Slight Slight Moderate to Severe	Moderate to Severe	Moderate hot	- - - - - - -	307 3r9
<u>Woodson</u> silt loam, silty clay loam 0-3% slopes	<u>Green ash</u> <u>Red cedar</u> <u>Hackberry</u> <u>Catalpa</u> <u>Osage orange</u>	- 30	26-35	Slight	Moderate	Moderate	Red cedar Green ash Catalpa 4/ Osage orange 4/	5c8

* Estimated site index based on a similar soil or another species on the same soil.

1/ Red oaks include Northern red oak, Southern red oak, black oak and scarlet oak.

2/ Underlined species are those selected in determining the site index.

3/ Confine to "cool" slopes, coves, benches and slope bases.

b) Field plantings only: do not interplant or underplant.

Table 3, SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY, is a summary of the most important interpretations for a woodland suitability group of soils.

Column one (1) includes the suitability group symbol and a brief description of the group of soils, including their important hazards and limitations for woodland use and management.

Column two (2) is a tabulation of the soil units within each woodland suitability group.

Column three (3) is a list of some commercially-important tree species which occur on the soils in each suitability group.

Column four (4) shows the site class (site index rounded off to the nearest 10-foot interval) for the most important tree species listed in column three.

Column five (5) lists some of the most important tree species which are suitable for planting or direct seeding on the soils in each suitability group.

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

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Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species 1/	Site Class	
(1)	(2)	(3)	(4)	(5)
2o7 Loamy soils with high potential productivity; no serious management problems suitable for southern pines or southern hardwoods.	<u>Ashton</u> silt loam to cherty silt loam, 0-3% slopes, undulating. <u>Huntington</u> silt loam to gravelly silt loam, 0-8% slopes. <u>Linside</u> clay loam to gravelly silt loam, 0-8% slopes, undulating. <u>Razort</u> silt loam to gravelly fine sandy loam, 0-8% slopes, undulating. <u>Staser</u> silt loam to gravelly silt loam, 0-3% slopes.	Red oaks Shortleaf pine Cottonwood Sycamore Sweetgum White oak Loblolly pine Black locust Black walnut Black cherry White ash Water oaks Shumard oak	80 80 90 85 80 75 - - - - - - - -	Black walnut Black locust Sycamore 4/ Cottonwood 4/ Red oaks Shortleaf pine Loblolly pine Shumard oak White oak White ash
3o7 Loamy upland soils with moderately high productivity; no serious management problems; suitable for southern pines or upland hardwoods.	<u>Baxter</u> silt loam, 0-20% slopes, slightly or moderately eroded. <u>Cumberland</u> silt loam to fine gravelly silt loam, 0-12% slopes, slightly or moderately eroded. <u>Decatur</u> silt loam to cherty silt loam, 1-20% slopes, slightly or moderately eroded. <u>Dewey</u> silt loam to cherty silt loam, 1-20% slopes, slightly or moderately eroded. <u>Elk</u> silt loam to gravelly silt loam, 1-12% slopes, slightly or moderately eroded. <u>Emory</u> silt loam to cherty silt loam, 0-12% slopes, slightly or moderately eroded. <u>Fayetteville</u> fine sandy loam to loamy fine sand, 1-20% slopes, slightly or moderately eroded. <u>Fullerton</u> silt loam to cherty silt loam, 0-20% slopes, slightly or moderately eroded. <u>Greendale</u> cherty silt loam, 0-20% slopes, slightly or moderately eroded. <u>Minvale</u> silt loam to cherty silt loam, 1-20% slopes, slightly or moderately eroded. <u>Newtonia</u> silt loam, 0-12% slopes, slightly or moderately eroded. <u>Pembroke</u> silt loam to cobbley fine sandy loam, 1-12% slopes, slightly or moderately eroded. <u>Pickwick</u> silt loam, 1-8% slopes, slightly or moderately eroded. <u>Viraton</u> silt loam, 0-20% slopes, slightly or moderately eroded.	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Black cherry White oak	70 70 50 - - - - -	Black walnut 3/ Black locust 3/ Red oaks 3/ Shortleaf pine Red cedar Loblolly pine
3x8 Stony loamy soils with moderately high productivity; moderate to severe erosion hazards and equipment limitations and moderate seedling mortality on hot exposures; suitable for southern pines or upland hardwoods.	<u>Fayetteville</u> stony fine sandy loam, 0-20% slopes and 20%+ slopes, slightly or moderately eroded.	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Black cherry White oak	70 70 50 - - - -	Black walnut 3/ Black locust 3/ Red oaks 3/ Shortleaf pine Red cedar Loblolly pine

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

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Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
<u>3w5</u> Seasonally wet soils with moderately high potential productivity; moderate equipment limitations and moderate seedling mortality; suitable for southern hardwoods.	<u>Newark</u> silt loam, 0-3% slopes. <u>Sloan</u> silt loam, 0-3% slopes. <u>Verdigris</u> silt loam, 0-1% slopes	Sweetgum Cottonwood Sycamore Shumard oak Water oaks Green ash Red oaks	80 90 85 80 80 - -	Shumard oak Cottonwood <u>4/</u> Sycamore <u>4/</u> Sweetgum Green ash Water oaks
<u>3w6</u> Excessively wet soils with moderately high potential productivity; severe seedling mortality and equipment limitations; best suited for southern hardwoods.	<u>Melvin</u> silt loam, 0-3% slopes undulating. <u>Verdigris</u> silt loam, 0-1% slopes, frequently flooded.	Cottonwood Sycamore Shumard oak Sweetgum Water oaks Pecan	80 80 75 80 80 -	Shumard oak Cottonwood <u>4/</u> Sycamore <u>4/</u> Sweetgum Water oaks Green ash
<u>3s9</u> Sandy soils with moderately high potential productivity; moderate equipment limitations and severe seedling mortality; suitable for southern pines and hardwoods.	<u>Bruno</u> loamy sand, 0-1% slopes	Sweetgum Cottonwood Sycamore Loblolly pine Shortleaf pine	80 90 80 - -	Cottonwood <u>4/</u> Sycamore <u>4/</u> Loblolly pine Shortleaf pine Sweetgum
<u>3f9</u> Stony, cobbley and gravelly loam soils with moderately high potential productivity; severe equipment limitations and seedling mortality; suitable for southern pines and hardwoods.	<u>Elsah</u> stony, cobbley and gravelly silt loam, 0-3% slopes.	Shortleaf pine Red oak White oak Red cedar Loblolly pine Black walnut White ash Black cherry Black locust Sweetgum Sycamore Cottonwood Water oaks River birch	70 70 70 50 - - - - - - - - - -	Shortleaf pine Loblolly pine Red oaks Black walnut Black locust White ash White oak Sweetgum Cottonwood <u>4/</u> Sycamore <u>4/</u>
<u>3r9</u> Steep loamy soils with moderately high potential productivity; moderate to severe erosion hazard and equipment limitations and moderate seedling mortality on hot exposures; suitable for southern pines and upland hardwoods.	<u>Baxter</u> silt loam, 20% slopes, slightly or moderately eroded. <u>Decatur</u> silt loam to cherty silt loam, 20% slopes, slightly or moderately eroded. <u>Dewey</u> silt loam to cherty silt loam, 20% slopes, slightly or moderately eroded. <u>Fullerton</u> silt loam to cherty silt loam, 20% slopes, slightly or moderately eroded. <u>Minvale</u> silt loam to cherty silt loam, 20% slopes, slightly or moderately eroded. <u>Viraton</u> silt loam to coarse cherty silt loam, 20% slopes, slightly or moderately eroded. <u>Greendale</u> cherty silt loam, 20% slopes.	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Black cherry White oak	70 70 50 - - - - -	Black walnut <u>3/</u> Black locust <u>3/</u> Red oaks <u>3/</u> Shortleaf pine Loblolly pine Red cedar

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

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Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting (5)
		Tree Species	Site Class (4)	
4ol Upland soils with moderate potential productivity; no serious management problems; suitable for southern pines and eastern redcedar.	<u>Agnos</u> gravelly loamy fine sand to loam, 0-20% slopes, slightly or moderately eroded. <u>Albertville</u> gravelly loamy fine sand, 1-20% slopes, slightly or moderately eroded. <u>Ashe</u> cherty silt loam, 0-20% slopes, slightly or moderately eroded. <u>Hobson</u> silt loam, 2-14% slopes, slightly or moderately eroded.	Shortleaf pine Red cedar	60 40	Loblolly pine Shortleaf pine Red cedar
4x2 Moderately rolling to steep and stony upland soils; moderate to severe erosion hazard, equipment limitations and seedling mortality; suitable for southern pines and eastern redcedar.	<u>Agnos</u> stony loamy fine sand to sandy loam, 0-40% slopes and greater, slightly or moderately eroded.	Shortleaf pine Red cedar	60 40	Loblolly pine Shortleaf pine Red cedar
4r3 Steep upland soils with moderate productivity; moderate to severe erosion hazard and equipment limitations and moderate seedling mortality on hot exposures; suitable for southern pines and eastern redcedar.	<u>Agnos</u> gravelly loamy fine sand to loam, 20% slopes, slightly or moderately eroded.	Shortleaf pine Red cedar	60 40	Loblolly pine Shortleaf pine Red cedar
4w2 Seasonally wet soils with moderate potential productivity; moderate equipment limitations; suitable for southern pines.	<u>Lawrence</u> silt loam, 0-3% slopes. <u>Sango</u> silt loam, 0-3% slopes.	Shortleaf pine Red cedar Red oak	60 40 60	Shortleaf pine Red cedar Loblolly pine
4s3 Sandy soils; moderate potential productivity; severe seedling mortality and moderate to severe erosion hazard and equipment limitations; suitable for southern pines and eastern redcedar.	Pineville loamy fine sand, 0-20% slopes and 20% slopes, slightly or moderately eroded.	Shortleaf pine Red cedar	60 40	Loblolly pine Shortleaf pine Red cedar
4w5 Seasonally wet soils with moderate potential productivity; moderate equipment limitations and seedling mortality; suitable for southern hardwoods.	Dunning silt loam to silty clay loam, 0-3% slopes undulating.	Water oaks Sweetgum Shumard oak Cottonwood Sycamore Cow oak Overcup oak Green ash	70 70 70 80 - - - -	Shumard oak Water oaks Cottonwood 4/ Sycamore 4/ Sweetgum Green ash
4w6 Excessively wet soils with moderate potential productivity; severe equipment limitations and seedling mortality; suitable for southern hardwoods.	Dunning silty clay, 0-3% slopes. <u>Robertsville</u> silt loam, 0-3% slopes.	Water oaks Sweetgum Shumard oak Cottonwood Sycamore Cow oak Overcup oak Green ash	70 70 70 80 - - - -	Shumard oak Water oaks Cottonwood 4/ Sycamore 4/ Sweetgum Green ash

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

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Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
4o7 Upland soils with moderate productivity; no serious management problems; suitable for southern pines and upland hardwoods.	<p>Baxter cherty silt loam, 0-20% slopes, slightly to moderately eroded.</p> <p>Captina silt loam to cherty silt loam, 0-12% slopes, slightly or moderately eroded.</p> <p>Christian silt loam to cherty silt loam, 1-20% slopes, slightly or moderately eroded.</p> <p>Fullerton silt loam to coarse cherty silt loam, 0-20% slopes, slightly or moderately eroded.</p> <p>Jay silt loam to silty clay loam, 1-12% slopes, slightly or moderately eroded.</p> <p>Landisburg silt loam to cherty silt loam, 1-12% slopes, slightly or moderately eroded.</p> <p>Lebanon silt loam, 0-14% slopes, slightly or moderately eroded.</p> <p>Locust fine sandy loam to gravelly loam, 0-20% slopes, slightly to moderately eroded.</p> <p>Russellville silt loam, 0-12% slopes, slightly to moderately eroded.</p> <p>Talbott loam to coarse cherty silt loam, 1-20% slopes, slightly or moderately eroded.</p> <p>Viraton silt loam to coarse cherty silt loam, 0-20% slopes, slightly or moderately eroded.</p>	<p>Shortleaf pine</p> <p>Red oaks</p> <p>Red cedar</p> <p>Black walnut</p> <p>Black locust</p> <p>White oak</p> <p>Black cherry</p> <p>Loblolly pine</p>	<p>60</p> <p>70</p> <p>40</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p>	<p>Shortleaf pine</p> <p>Loblolly pine</p> <p>Red cedar</p> <p>Black walnut 3/</p> <p>Black locust 3/</p> <p>Red oaks 3/</p>
4x8 Stony upland soils with moderate potential productivity; moderate to severe erosion hazards and equipment limitations and moderate seedling mortality on hot exposures; suitable for southern pines and upland hardwoods.	<p>Captina stony loam, 1-14% slopes, slightly or moderately eroded.</p> <p>Christian stony sandy loam to stony loamy fine sand, 1-20% slopes and greater, slightly or moderately eroded.</p> <p>Locust stony fine sandy loam, 1-20% slopes, slightly to moderately eroded.</p>	<p>Shortleaf pine</p> <p>Red oaks</p> <p>Red cedar</p> <p>Black walnut</p> <p>Black locust</p> <p>Sweetgum</p>	<p>60</p> <p>60</p> <p>40</p> <p>-</p> <p>-</p> <p>-</p>	<p>Loblolly pine</p> <p>Shortleaf pine</p> <p>Red oaks 3/</p> <p>Black walnut 3/</p> <p>Black locust 3/</p> <p>Red cedar</p>
4f8 Moderately rolling to steep loamy upland soils with coarse fragments in the profile; moderate potential productivity; moderate to severe erosion hazards, equipment limitations and seedling mortality; suited to southern pines and upland hardwoods and eastern redcedar.	<p>Clarksville cherty silt loam, 0-40% slopes; slightly to moderately eroded.</p> <p>Coulstone cherty silt loam, 0-40% slopes, slightly to moderately eroded.</p> <p>Nixa silt loam to cherty silt loam, 1-20% slopes, slightly to moderately eroded.</p>	<p>Shortleaf pine</p> <p>Red oaks 3/</p> <p>White oak 3/</p> <p>Red cedar</p> <p>Black walnut 3/</p> <p>Black locust 3/</p> <p>Loblolly pine</p> <p>Black cherry 3/</p>	<p>60</p> <p>60</p> <p>60</p> <p>40</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p>	<p>Loblolly pine</p> <p>Shortleaf pine</p>
4w8 Seasonally wet soils with moderate potential productivity; moderate equipment limitations and seedling mortality; suitable for southern pines and hardwoods.	<p>Samba silty clay (mounded) to silt loam, 0-3% slopes.</p> <p>Sloan silt loam, silt loam (mounded), silty clay, silty clay (mounded), 0-3% slopes.</p>	<p>Water oaks</p> <p>Sweetgum</p> <p>Loblolly pine</p> <p>Shortleaf pine</p>	<p>70</p> <p>70</p> <p>70</p> <p>60</p>	<p>Sweetgum</p> <p>Loblolly pine</p> <p>Shortleaf pine</p> <p>Red cedar</p> <p>Red oaks 3/</p> <p>Black locust 3/</p> <p>Black walnut 3/</p>

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

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Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
<u>4r9</u> Steep loamy upland soils with moderate potential productivity; moderate to severe erosion hazard and equipment limitations and moderate seedling mortality on hot exposures; suitable for southern pines and upland hardwoods.	<u>Baxter</u> silt loam to coarse cherty silt loam, 20%+ slopes, slightly to moderately eroded. <u>Christian</u> fine sandy loam to gravelly fine sand, 20%+ slopes, slightly to moderately eroded. <u>Fullerton</u> silt loam to coarse cherty silt loam, 20%+ slopes, slightly to moderately eroded. <u>Locust</u> fine sandy loam to gravelly loam, 20%+ slopes, slightly to moderately eroded. <u>Talbott</u> silt loam to coarse cherty silt loam, 20%+ slopes, slightly to moderately eroded. <u>Viraton</u> cherty silt loam, 20%+ slopes, slightly to moderately eroded.	Shortleaf pine Red oak Red cedar Black walnut Black locust White oak Black cherry Loblolly pine	60 70 40 - - - - -	Shortleaf pine Loblolly pine Black walnut 3/ Black locust 3/ Red oak 3/ Red cedar
<u>5o1</u> Upland loamy soils with low potential productivity; no serious management problems; best suited for southern pines and eastern redcedar.	<u>Ashe</u> cherty silt loam, 0-20% slopes. <u>Bates</u> fine sandy loam, 0-12% slopes, slightly to moderately eroded. <u>Christian</u> fine sandy loam, 3-12% slopes, severely eroded. <u>Mountview</u> silt loam, 0-12% slopes, slightly to moderately eroded. <u>Sallisaw</u> silt loam to gravelly silt loam, 0-8% slopes.	Shortleaf pine Red cedar	50 30	Shortleaf pine Loblolly pine Red cedar
<u>5x2</u> Stony upland soils with low potential productivity; moderate to severe erosion hazard, equipment limitations and seedling mortality; best suited for southern pines and eastern redcedar.	<u>Conasauga</u> stony sandy loam, 1-20% slopes and greater, slightly to moderately eroded. <u>Colbert</u> stony fine sandy loam and stony silt loam, 1-20% slopes and greater, slightly to moderately eroded.	Shortleaf pine Red cedar Loblolly pine	50 30 -	Loblolly pine Shortleaf pine Red cedar
<u>5c2</u> Clayey upland soils with low potential productivity; moderate to severe erosion hazard, equipment limitations and seedling mortality; best suited for southern pines and eastern redcedar.	<u>Conasauga</u> silty clay loam to gravelly fine sandy loam, 0-40% slopes, slightly to moderately eroded. <u>Colbert</u> silt loam to cherty silt loam, 1-40% slopes, slightly to moderately eroded.	Shortleaf pine Red cedar Loblolly pine	50 30 -	Loblolly pine Shortleaf pine Red cedar
<u>5d2</u> Moderately rolling to steep shallow upland soils with low potential productivity; moderate to severe erosion hazard, equipment limitations and seedling mortality; suitable for southern pines and eastern redcedar.	<u>Corydon</u> silt loam to stony silty clay loam, 1-40% slopes, slightly to moderately eroded.	Shortleaf pine Red cedar	50 30	Loblolly pine Shortleaf pine Red cedar
<u>5f2</u> Upland soils with coarse stony fragments; with low potential productivity; slight to moderate erosion hazard and moderate to severe seedling mortality; suitable for southern pines and eastern redcedar.	<u>Craig</u> silt loam to cherty silt loam, 0-8% slopes, slightly to moderately eroded. <u>El Dorado</u> cherty silt loam, 1-20% slopes, slightly to moderately eroded.	Shortleaf pine Red cedar Loblolly pine	50 30 -	Loblolly pine Shortleaf pine Red cedar

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

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Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
<u>5f3</u> Soils with fragments of sandstone and shale; with low potential productivity; slight to moderate equipment limitations and severe seedling mortality; suitable for southern pines and eastern redcedar.	Culleoka flaggy silt loam, 1-20% slopes, slightly to moderately eroded.	Shortleaf pine Red cedar Loblolly pine	50 30 -	Loblolly pine Shortleaf pine Red cedar
<u>5c5</u> Clayey soils with low potential productivity; moderate seedling mortality; suited to selected hardwoods.	Cherokee silt loam, 0-1% slopes. Gerald silt loam, 0-1% slopes.	Water oaks Sweetgum Green ash Hackberry Catalpa Osage orange	50 50 - - - -	Green ash Catalpa 4/ Osage orange 4/
<u>5x8</u> Moderately rolling to steep stony upland soils with low potential productivity; moderate to severe erosion hazard, equipment limitation and seedling mortality; suited to eastern redcedar and selected hardwoods.	Summit stony silty clay loam, 0-40% slopes, slightly to moderately eroded.	Red cedar Water oaks Hackberry Green ash	30 - - -	Red cedar Green ash Catalpa 4/ Osage orange 4/
<u>5c8</u> Clayey soils with low potential productivity; moderate equipment limitations and seedling mortality; suited to eastern redcedar and selected hardwoods.	Summit silty clay loam, 0-3% slopes. Woodson silt loam to silty clay loam, 0-3% slopes.	Red cedar Water oaks Hackberry Green ash	30 - - -	Red cedar Green ash Catalpa 4/ Osage orange 4/
<u>5d9</u> Shallow clayey soils with rock outcroppings; low potential productivity; slight to severe erosion hazard, equipment limitations, and seedling mortality; best suited for eastern redcedar, shortleaf pine and selected hardwoods.	Gasconade rocky silty clay, gravelly silty clay loam, stony silty clay loam, 1-20% slopes, slightly to severely eroded. Sogn rocky silty clay, gravelly silty clay loam, stony silty clay loam, 1-20% slopes, slightly to severely eroded.	Shortleaf pine Red cedar Hackberry White ash Native vegetation	50 and less 30 and less - - -	Red cedar Shortleaf pine Black locust 3/ White ash Native vegetation
<u>1/</u> Red oaks include Northern red oak, Southern red oak, black oak and scarlet oak. <u>3/</u> Confine to "cool" slopes, coves, benches and slope bases. <u>4/</u> Field plantings only; do not interplant or underplant.				

